

WHAT IS CLAIMED IS:

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a:
1. A visual display system having an improved color gamut, comprising:
a display device;
a color signal translator;
input color data;
5 the color signal translator translating the input color data according to properties of a medium to be emulated by the display device;
the display device receiving and displaying the translated color data;
an optical filter;
the optical filter filtering an output of the display device; and
10 the optical filter having a stop region located between wavelengths corresponding to two additive primary colors.
 2. A visual display system according to claim 1 wherein said properties include a color gamut, gamma, and dynamic range of the medium to be emulated.
 3. A visual display system according to claim 1 wherein said filter has at least a first peak centered at approximately either one of red, green, or blue wavelengths.
 4. A visual display system according to claim 1 wherein said filter is a rugate filter.
 5. A visual display system according to claim 1 wherein said filter is a dual bandstop filter.
 6. A visual display system according to claim 1 wherein said filter comprises: a first notch centered between about 450nm and 515nm; and a second notch centered between about 530nm and 620nm.
 7. A color gamut adjusting system for a visual display system, comprising:
a translator for translating a digital color signal display system input according to
properties of a medium to be emulated by the display system; and

5 a filter that filters an output of the display system, said filter relatively attenuates non-primary colors;

whereby color purity of the display output is increased, thereby increasing the display's color gamut.

8. A color gamut adjusting system according to claim 7 wherein said properties include a color gamut, gamma, and dynamic range of the medium to be emulated.

9. A color gamut adjusting system according to claim 7 wherein said filter is a rugate filter.

10. A color gamut adjusting system according to claim 7 wherein said filter is a dual bandstop filter.

11. A color gamut adjusting system according to claim 7 wherein said filter comprises a first notch centered between about 450nm and 515nm, and a second notch centered between about 530nm and 620nm.

12. A visual display system comprising:

a data input port for receiving a digital color signal input;

said signal comprising at least one component primary color from the group consisting of red, green, and blue;

5 a lookup table for processing said color signal input according to properties of a medium to be emulated by said color display device and producing a translated color signal output;

a color display device for receiving and displaying said translated color signal;

a filter for filtering an output of said color display device; and

10 wherein said filter has at least one of a notch centered between about 450nm and 515nm and a notch centered between about 530nm and 620nm.

13. A visual display system according to claim 12 wherein said properties of the medium to be emulated comprise a color gamut, gamma, and a dynamic range.

14. A visual display system comprising:
 - a means for altering a digital color signal according to a color gamut to be produced and producing an altered digital color signal;
 - a single aperture projector receiving said altered digital color signal;
 - 5 a filter for filtering a projection of light from said projector; and
 - said filter altering the spectral bandwidths of at least one of said component primaries of said projection; whereby said color gamut is produced.
15. A visual display system according to claim 14 wherein said filter is a rugate filter.
16. A visual display system according to claim 14 wherein said filter is a dual bandstop filter.
17. A visual display system according to claim 14 wherein said filter comprises:
 - a first notch centered between about 450nm and 515nm; and
 - a second notch centered between about 530nm and 620nm.
18. A visual display system comprising:
 - a color display device;
 - a lookup table which processes a color signal according to properties of a medium to be emulated by the color display device to produce a processed color signal;
 - 5 the color display device receiving and displaying the processed color signal as a display; and
 - a filter which filters the display.
19. A visual display system according to claim 18 wherein said filter includes a first notch centered between about 450nm and 515nm and a second notch centered between about 530nm and 620nm.
20. A visual display system according to claim 18 wherein the color signal comprises at least one component primary color from the group of red, green and blue.

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21. A visual display system according to claim 18 wherein said color display device comprises a cathode ray tube display device.
22. A visual display system comprising:
an electronic display device having a display; and
a filter positioned relative to the display and having bandstops which increase color gamut of the display wherein the bandstops shift the primary colors of the display closer to the spectrum locus.
23. A visual display system according to claim 22 wherein the bandstops provide a first notch centered between about 450nm and 515nm and a second notch centered between about 530nm and 620nm.
24. A visual display system comprising:
a cathode ray tube display device; and
a filter which filters a display of said display device so as to increase the effective gamut of said display device, said filter having bandstops which shift primary colors of the display to increase color gamut of the display.
25. A process for altering a color gamut of a visual display system, comprising:
processing a digital color signal according to a color gamut, gamma, and dynamic range of a medium to be emulated;
delivering the processed color signal to an electronic display device; and
filtering an output of said display device to purify primary colors within the output, whereby the color gamut of the display system is altered.
26. A method of producing a motion picture having digital imagery therein, comprising:
emulating the appearance of color film by: modifying an additive color display device to emulate a color gamut of film;
displaying a draft digital image on said modified additive color display device;
amending said digital image to create final digital color imagery; and

producing a film from said amended digital color imagery.

27. A system of improving the appearance of a color display, comprising:

a filter at the output of the display, the filter relatively attenuating non-primary colors; and

5 a lookup table for receiving a digital color input signal and for compensating the digital color input signal with reference to a response of said filter, such that the filtered display output has an increased color gamut.

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